

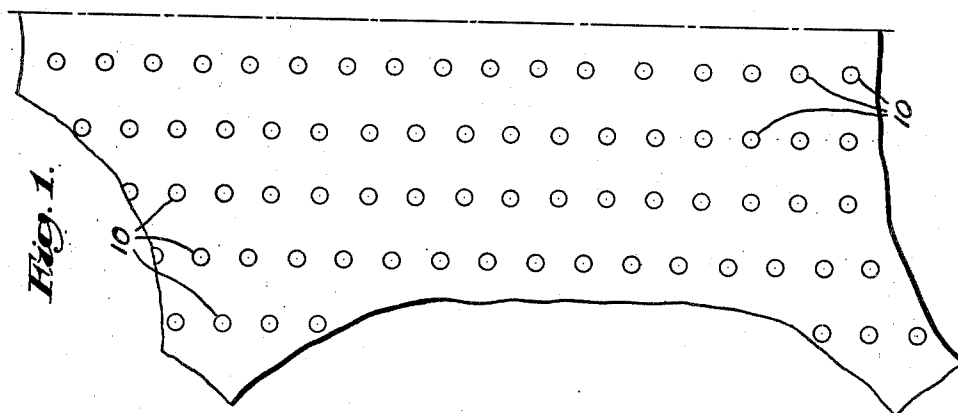
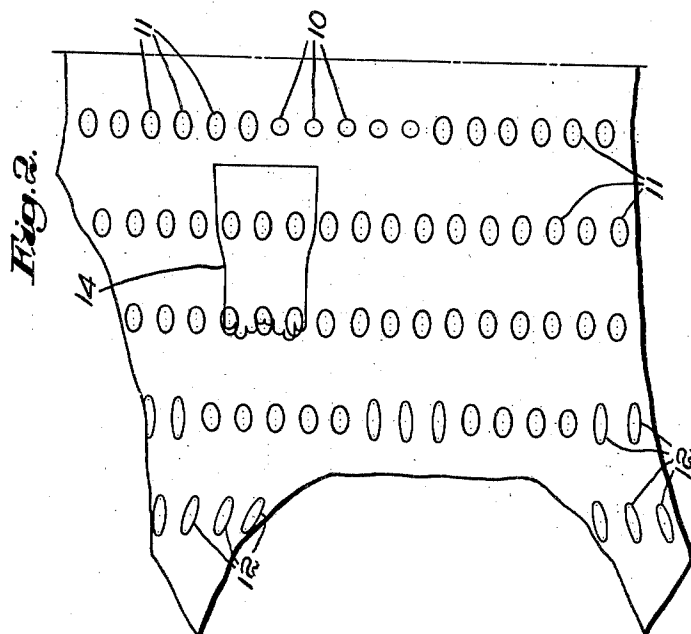
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PROCESS OF GLOVE CUTTING

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PROCESS OF GLOVE CUTTING

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This invention relates to the art of cutting leather gloves and consists in an improved process for so treating a skin of leather that the cutter may determine directly from the skin and without reference to scales or extraneous graduations of any kind, the characteristics of each individual area of the skin and its suitability as material for gloves of the quality he desires to cut.

Glove leather is specially tanned from the skins of a definitely limited group of animals including sheep, hair sheep, deer, and peccary. The desired qualities of glove leather are not at present obtained from the skins of such animals as domestic pig, calf, horse, or kangaroo. The essential characteristic of glove leather may be referred to as "flow," although in practice this characteristic is termed "leather" by glove cutters familiar with the craft. A given piece of properly tanned and worked glove leather does not change in the extent of its superficial area when stretched but it very definitely changes in shape. A stopping place is reached beyond which glove leather to be satisfactory must cease to flow and be elastic. When glove leather is drawn out in a direction at right angles to that in which it has been first worked out or stretched it will flow and assume a new shape until once more a point is reached where flow ceases and elastic deformation begins to take place.

This flow varies in differently tanned leathers and in different parts of a single skin. In general glove leather is satisfactory which has a 2:3 flow ratio, that is to say, the leather is satisfactory if, after being first well drawn out in one direction and then drawn out in a direction at right angles thereto, the flow in the second direction is in an order of 3:2. This characteristic has been checked and determined in the past by marking the once-stretched skin with a series of straight lines or marks and then stretching the skin in a direction at right angles thereto to bring these marks into registration with an extraneous scale. While this practice has been serviceable to a certain extent it is cumbersome and requires equipment not always available and is subject to mistake and miscalculation in its application. The cutting of leather dress gloves has been for over a century and a half the work of carefully trained artisans or craftsmen who have acquired expert judgment and skill as a result of long practical experience and who are unable or unwilling to impart their skill to others. Because a dress glove must fit well if it

is to be valued by the wearer, it is necessary that the cutters maintain a very careful control over all of their work. Even one finger cut from unsuitable material is enough to render a whole pair of gloves unsatisfactory. The process of my invention provides a simple and efficient procedure by which observation of definite markings on the skin imparts to the cutter information as to the characteristics of the skin which has heretofore been intangible.

With these conditions in view the present invention is designed to fulfill the following objects:

1. To inform the cutter as to the flow characteristics of the leather upon which he is working.
2. To relieve the skilled craftsman of the time consuming operations which are now regarded as indispensable.
3. To assist the skilled workman in better retaining his sense of the feel of the leather, by relieving him of performing tasks which require alternately physical exertion and nicety of control.
4. To provide a system of checking through which causes for failure of fit may be traced.
5. To provide a process by which record of the behavior of classes of leather, of various tanning and dressing methods, and of given lots may be kept and made available.

I have discovered that these and other valuable advantages may be achieved by a process which is characterized by first drawing out or stretching the leather in one direction, then printing or marking on the stretched skin circles or other symmetrical designs distributed over the area of the skin, then drawing out or stretching the skin in a direction at right angles to the first stretching, and finally cutting out glove blanks from those areas of the skin where the circles or other designs have been transformed into ellipses or elongated figures of appropriate dimensions as, for example, ellipses having a 3:2 ratio of major to minor axes. The circles or figures which have been transformed in approximately this manner indicate the areas in the skin having the proper flow characteristics. In those areas where the figures are substantially more elongated or where they have been insufficiently elongated the cutter is warned that he is dealing with unsuitable glove leather. Beyond this, however, my novel process gives him an opportunity of utilizing areas of marginal quality by "standing" the skin, that is to say, by locally working the skin back to a condition

approximating the desired ratio and then proceeding with the cutting operation.

It will be noted that the process of my invention is self-contained in that it requires only treatment of the skin of leather itself and the usual drawing out or stretching thereof without the reference to any outside or extraneous scale. Moreover it is completely comprehensive in that it indicates the flow characteristics of all parts of the skin and shows plainly not only those areas which are suitable but those areas which are unsuitable for the work in hand.

These and other characteristics and advantages of my novel process will be best understood and appreciated from the following description of a preferred manner of carrying it into practice, as illustrated in the accompanying drawing in which:

Fig. 1 is a plan view of half a skin of leather worked out or stretched longitudinally and marked, and

Fig. 2 is a plan view showing the same skin after it has been worked out or stretched transversely.

The skin shown in Fig. 1 is first dampened and then worked out or stretched longitudinally, this being along the direction which in the finished glove will lie across the hand. The working out or stretching of the skin is usually effected by hand and in this process the skin is sometimes drawn across an angle at the edge of the bench. The drawing out or stretching calls for considerable physical exertion on the part of the workman and is carried out on practically every square inch of superficial area in the skin. It familiarizes the workman not only with the texture of the skin, but brings out imperfections and blemishes which he may later avoid in the cutting operation.

The next step of the process consists in printing or marking in any convenient manner upon that side of the skin which will be the inner part of the glove a sufficient number of spaced symmetrical designs to cover its entire area. As herein shown I employ circles spaced from each other and arranged in rows extending longitudinally of the skin. The circles may be approximately 1" in diameter or one French inch which is about 1.07 English inches. A convenient way of marking the skin is by running across a wheel having thereon circumferential marking pads of the desired shape. While I have shown the skin as marked with spaced circles it will be understood that any symmetrical figure or design may be used instead of a circle and that the outline of the figure need not be continuous, for example a figure merely outlined by dashes or arcs would be entirely satisfactory for purposes of the present invention.

Having worked out and marked the skin as explained in connection with Fig. 1, the workman now proceeds to stretch or work out the skin transversely or in a direction at right angles to the direction of original working out. This second working out or stretching brings out the flow characteristic of the leather and the shape of the skin and all of the circles thereon are modified in accordance with this characteristic. As suggested in Fig. 2 the skin as a whole may decrease about one third in length and increase about one third in width although this flow is not uniform and the local behavior of the skin is indicated by the behavior of the figures printed thereon. For example in the flank portions the flow is excessive as indicated by the elongated

ellipses 12. In an intermediate longitudinal zone the flow is exactly that desired and this is indicated by the ellipses 11 which have been transformed from circles to ellipses having a 3:2 ratio of major to minor axis. That is, the major axis of each circle has been elongated with respect to its minor axis so that the ratio is now 3:2. The excessive flow indicated by the elongated ellipses 12 shows the cutter that those parts of the skin are not suitable for a glove part or at least not suitable for inclusion in the trunk. Similarly the circles 10 which depart but slightly from the circular form in a small area adjacent to the backbone of the skin indicate that the flow characteristic of the leather in that area is not adequate and that it should not be included in a glove trunk. On the other hand the uniformly and adequately elongated ellipses 11 indicate that a trunk may be properly cut in the location where a trunk 14 is outlined in Fig. 2.

As already suggested where an excessive elongation of the circles appears, it may be possible for the workman to "stand" the leather, in other words to work the leather back longitudinally to make the ellipses approach the desired 3:2 shape and when this has been done a trunk may be cut to include a portion of the area which has been reworked in this manner. The extent to which this expedient is practiced depends of course on the quality of gloves being cut and the areas affected. Often areas may be thus reworked without seriously impairing the gloves including that material.

It will thus be seen that I have provided a process which in the first place indicates that the skin has in certain areas leather suitable for the gloves to be manufactured. Second, in case of failure to fit the cause may be checked by study of the traces of the marking remaining upon the leather or by remarking the glove and studying the behavior of its material under working out in two directions. Third, the process informs the cutter as to the flow characteristics of each individual area of the skin. Fourth, the time of the skilled craftsman necessary to the study of each skin is substantially reduced. Fifth, the assistance of less skilled labor is made possible in working out and marking the skin while the craftsman may devote himself more particularly to cutting out the trunks from a skin having its flow characteristics already clearly indicated thereon.

In Fig. 1 the skin is represented as having been initially stretched or worked out in a longitudinal direction, that is, in a direction parallel to the backbone of the animal. In Fig. 2 the trunk 14 is indicated as lying transversely to the backbone. It frequently happens, however, that the initial working out of the skin is in a transverse direction and accordingly the secondary working out would be effected longitudinally of the skin and the trunks would lie parallel to instead of at right angles to the backbone.

Having thus disclosed my invention and suggested certain specific ways in which it may be put into practice, I claim as new and desire to secure by Letters Patent of the United States:

1. A process of glove cutting which consists in first stretching a skin of leather in one direction, then printing on the stretched skin rows of circles spaced from each other and distributed over most of the area of the skin, then stretching the skin in a direction at right angles to the first stretching, and finally cutting out glove blanks

from those areas of the skin where the circles have become approximately 3:2 ellipses.

2. A process of glove cutting which consists in first stretching a skin of leather in one direction, then wheeling rows of circles on the stretched skin, then stretching the skin at right angles to the first stretching, finally cutting out glove blanks from those areas of the skin where the circles have become approximately 3:2 ellipses, pulling the skin to adjust more elongated ellipses approximately to that shape, and cutting out glove blanks from such adjusted areas.

3. A process of glove cutting which consists in stretching a skin of leather longitudinally, marking spaced circles over the stretched area, stretching the skin transversely, finally cutting

out glove blanks in those areas where the circles have been transformed into ellipses with their transverse axes bearing substantially a 3:2 ratio to their longitudinal axis.

5 4. A process of glove cutting which consists in stretching a skin of leather longitudinally, marking the face of the skin which is to be inside the glove with a plurality of symmetrical designs distributed in spaced relation thereon, then stretching the skin transversely, and finally cutting out glove blanks in those areas of the skin where each design has been moderately elongated in its axis which is disposed transversely as compared to its axis which is disposed longitudinally of the skin.

15 WILLIAM GREEN.